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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,534	03/31/2003	Tetsukazu Hukuhara	Q68538	5544

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
YEE, DEBORAH	
ART UNIT	**PAPER NUMBER**
1742	

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/070,534	TETSUKAZU HUKUHARA ET AL	
	Examiner	Art Unit	
	Deborah Yee	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1 and 2* is/are allowed.

6)☒ Claim(s) *3 to 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5-04-05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 3-37989 .

3. The JP'989 apparatus comprises essentially the same components as recited by claim 3. See the English abstract of JP'989 teaches an apparatus comprising an induction heating means for continuously heating steel wire, a wire diameter detection means for continuously detecting a diameter and a control means for controlling the amount of energy supplied to said induction heating means in a manner such that said steel wire has its individual portions heated to individual predetermined temperature over the entire length of said steel wire, wherein the amount of said energy supplied to said induction heating means is proportional to a wire diameter of said steel wire having been detected by said wire diameter detection means. Even though JP'989 does not disclose using apparatus for continuous heat treating a double tapered steel wire having variable diameter wherein the small diameter portions are substantially equal to the tensile strength of the large diameter portions, such would not be a patentable difference since this is a future property obtained when quenching and tempering

occurs. Moreover, it has been held that in an apparatus claim, the manner of using the apparatus is not germane to the issue of the patentability of the apparatus itself.

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 3-379879 as applied to claim 3 above, and further in view of Japanese patent 360056417.

5. JP'879 apparatus essentially meets claims 4 and 5 except for quenching means and tempering means. It is well known in the art and also taught by JP'417 that wire products are commonly quenched and tempered after working and heating to further enhance properties. Hence it would be a matter of choice well within the skill of the artisan to incorporate a quenching and tempering means to heating wire apparatus of JP'879.

6. Also even though JP'879 does not teach using apparatus for continuous heat treating a double tapered steel wire having variable diameter wherein the small diameter portions are substantially equal to the tensile strength of the large diameter portions, such would not be a patentable difference since it has been held that in an apparatus claim, the manner of using the apparatus is not germane to the issue of the patentability of the apparatus itself.

7. Claims 3 to 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 360056417.

8. The English abstract of JP'417 discloses an apparatus comprising an induction heating means, a wire detection means for detecting wire diameter, a cooling device and tempering furnace which meets the recited claims. Even though prior art apparatus

additionally comprises a rolling means, such would not be excluded from the apparatus claims reciting "comprising". Note that the term "comprises" is inclusive of all unrecited components even if they affect the basic and novel characteristics of the present invention. To close claim, it is recommended to use language such as –consisting of--- or ---consisting essentially of---.

9. Also even though JP'471 does not teach using apparatus for continuous heat treating a double tapered steel wire having variable diameter wherein the small diameter portions are substantially equal to the tensile strength of the large diameter portions, such would not be a patentable difference. Note claim 3 recites limitation as future and intended use and hence would not be a patentable distinction. Morever in regard to claims 4 and 5, it has been held that in an apparatus claim, the manner of using the apparatus is not germane to the issue of the patentability of the apparatus itself.

Allowable Subject Matter

10. Claims 1 and 2 are allowed.

11. The following is an examiner's statement of reasons for allowance: The art of record does not teach or fairly suggest a continuous heat treated double tapered steel wire, as claimed , having variable diameter portions such that the tensile strength of the small diameter portions is substantially equal to the tensile strength of the large-diameter portions ; and the process of continuously heat treating a double tapered steel wire comprising the steps of continuous detecting steel wire diameter and controlling the amount of energy of induction heating supplied to said steel wire wherein the amount of

said energy is proportional to a wire diameter of said wire having been detected so that said wire is evenly heated over the entire length of said wire at the same temperature followed by at least one of quenching and tempering .

12. As stated in applicant's remarks dated 5-04-05, the applied prior art does not teach or fairly suggest the concept of the present invention. JP'989 method is directed to evenly heating a straight steel rod to a predetermined temperature, which temperature is required in a subsequent press-forging process of the steel rod thus heated. Moreover JP'417 and Kato are directed to a method for forming or shaping a constant-diameter rod work piece into a tapered rod by diameter reducing heated portions of said workpiece . The prior art tapered rod would not have uniform tensile strength since large diameter portions and small diameter portions are not evenly heated to the same temperature.

13. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

14. The unapplied art has been cited to further depict the state of the art in heat treating tapered steel wire.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Deborah Yee
Primary Examiner
Art Unit 1742

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